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USER'S GUIDE

*Selected geoscience data from the NODA Swayze greenstone belt GIS
database project, Superior Province, Ontario.*

GSC Open File: D3770
OGS Open File: MRD 47

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1 Introduction

As geologic terrane is explored and re-explored, it has become increasingly important in mineral exploration to develop and acquire large geoscience databases in consistent formats that on-going or future work can incorporate and build upon. Traditionally, these databases have been compiled in analog format, but as more data become available in digital format, digital databases have increased in popularity. Unfortunately, a large amount of older data remain in analog format. Conversion to digital format is often time consuming and expensive. Furthermore, even digital data may require cleaning, processing, georeferencing, or other time consuming procedures to provide data suitable for analysis by Geographic Information Systems (GIS). The advent of affordable GIS technology has greatly facilitated this process, providing a host of new data import tools and more importantly, integrated georeferencing, display, image manipulation and analytical procedures.

In January 1993 the Geological Survey of Canada in conjunction with the Ontario Geological Survey initiated a three year project involving the compilation and analysis of a wide range of digital data over the Swayze greenstone belt (Figure 1) using geographic information system (GIS) technology. The project was funded by the four-year Northern Ontario Development Agreement (NODA), a subsidiary agreement to the Canada-Ontario Economic and Regional Development Agreement (ERDA) initiated by the governments of Canada and Ontario.

The scope of the project involved the compilation and analysis of geoscience data and the production of digital datasets, hardcopy maps and analysis methodologies useful for regional mapping and exploration within Ontario. Data have been provided by industry partners (Falconbridge Ltd., Noranda Inc.) and government agencies (Ontario Geological Survey, Geological Survey of Canada), purchased, or digitized from maps. In all cases, as much of the raw data attributes have been retained as possible. As part of the compilation process, however, some changes have been made to standardize formats, projection, and legend information to allow ease of use on various platforms and GIS software.

Exploration companies, Falconbridge Ltd., and Noranda Inc., contributed proprietary data (both digital and analog) as well as exploration expertise which was essential for a thorough analysis of the data with respect to regional geologic exploration models. Working directly with exploration companies within the scope of the project was essential as the data and analysis techniques developed were directly utilized by companies working in the study area. Furthermore, the expertise held by exploration companies were directly utilized within a GIS framework, allowing for realistic and useful results to be obtained.

The objective of this CD-ROM release is thus to provide a ready-made, georeferenced, digital database that the novice GIS user can immediately use with the provided viewer, and that more advanced GIS users can import easily into their GIS system directly or by using the provided common interchange formats. **Please note that hydrological, lake-**

sediment geochemical data and remotely sensed data (listed in Appendix A) have not been included on this issue of the CD as royalty charges for these data would make the cost of this CD prohibitive. However, pertinent ordering information for the 1:50000 scale NTS map sheets that cover the area, available digital lake sediment data, and remotely sensed data has been included for the users convenience in Appendix A.

Another GSC Open File, (CD-ROM) (D3771), contains many of the various posters prepared by J. Harris, L. Wilkinson, and others dealing with analysis of many of the datasets included in this CD release. These posters which summarize how the data may be visualized, analyzed and integrated into mineral favourability maps are stored in .PDF format for viewing with Adobe Acrobat®.

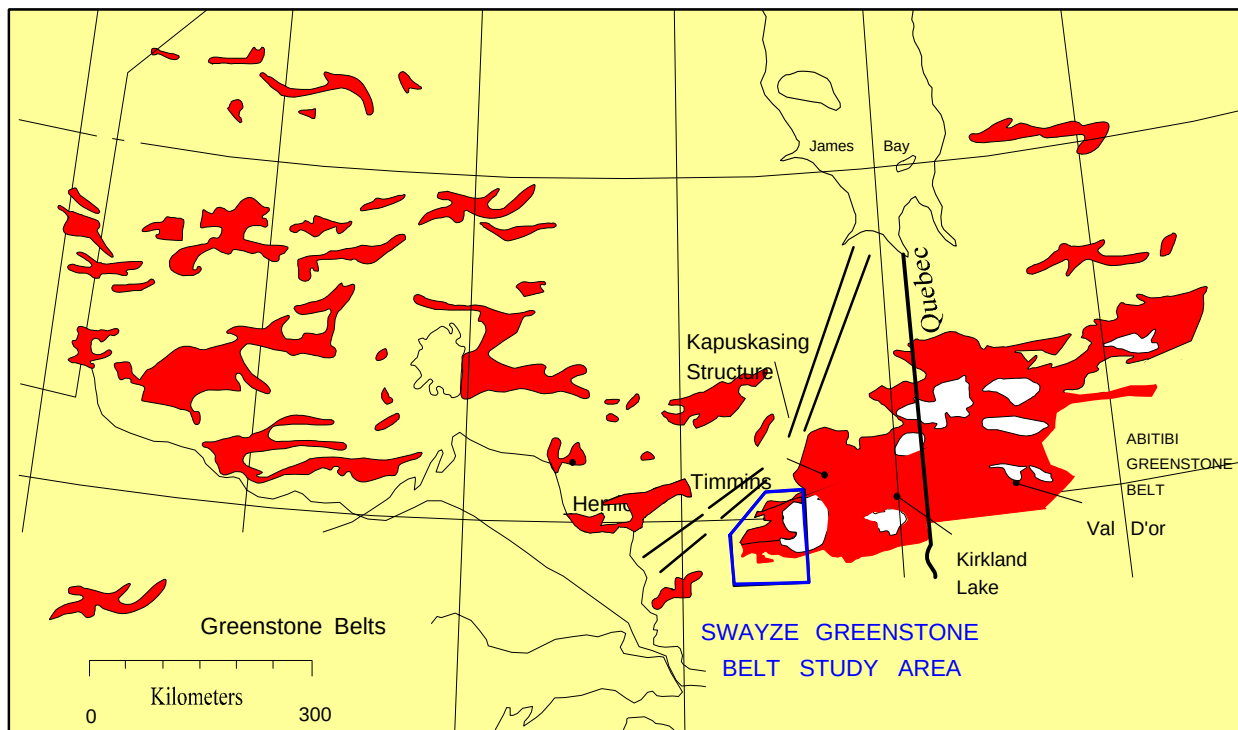


Figure 1 – Location of Swayze greenstone belt

2 Hardware and Software Requirements

For PC users, a free data viewer, created on the CD with ESRI's Arcview Data Publisher®, is included. The *NODA Swayze GIS viewer*, a clone of ArcviewII¹ that can

¹ Arcview I and II are data visualization software packages distributed by Environmental Systems Research Institute Inc. (ESRI) that allows display, overlay and querying of data stored in ESRI Arc/Info format. There are numerous data visualization packages available commercially and the choice of Arcview Data

only be used with this CD, is useful for those with no installed GIS software of their own, or with little experience with GIS software. It comes with a set of pre-made graphical views of the data, and allows users to create their own views, and query and analyze the data sets via these views. To install this program requires a minimum of 7 Megabytes of hard disk space and allows the user to access the over 600 Megabytes of data directly from the CD. No viewing software is provided for Mac or Unix clients on this CD.

Installation of provided viewer

- insert CD-ROM into CD drive of PC.
- on Windows 95 click on "**Start**", then "**Run**", then "**Browse**".
- navigate to your CD drive, then double-click "**Setup.exe**".
- click on "**OK**" to start installation .
- (during installation, click on "**Continue**" to proceed when required).
- at "**Please choose component(s) you would like to install**", choose "**NODA**" (required). Only choose "**DATA**" if you want to store and access the data from your hard drive (600MB!) instead of the CD.
- at "**Path**", enter a path where NODA Swayze GIS Viewer will be installed, or leave the default path as is.
- a DOS window will open to copy files to your PC. When the "**File(s) copied**" message appears, terminate the DOS window by clicking on the upper right hand "X" button.
- wait while a Program Window appears and icons for the Viewer are copied. Continue waiting until the message window appears, then click on "**Continue**".
- you can copy the NODA Swayze GIS Viewer shortcut icon from the Program Window to your desktop and use it to start the program, or you can select the program by clicking on "**Start**", then "**Programs**", then "**NODA**" in Windows 95®.

Alternatively, the data can be copied directly to a users hard drive for use by software of their own choosing. This does not require 600 plus Megabytes of hard disk space since a user will normally only use one or two of the available formats with their GIS system. The individual formats typically take 100 to 150 Megabytes of hard disk space each (see section 4 – Data Formats).

For more advanced GIS users, Arcview III® in conjunction with *Spatial Analyst*² and the *Weights of Evidence*³ mineral potential modeling package (*WofE*) can be used to view and analyze the data on this CD-ROM.

Publisher for this CD was made as it is compatible with the Arc/Info GIS package used for data management of GSC NATMAP projects. The GSC does not endorse ESRI over other available data visualization packages. Arcview version II is available for IBM-compatible and Unix workstation computers. On IBM-compatible computers Arcview requires Windows, Ver. 3.0 or higher, and at least a 80386-based computer with at least 4 Mbytes of RAM. A 100 Mbyte hard disk or larger is recommended

² *Spatial Analyst* is available through ESRI Canada

Due to space constraints on the CD, two versions of the data set have been compressed. The DXF and MapInfo (MIF) formats (see section 4 – Data Formats) are not needed by the included viewing software and the data in these formats have been compressed with PKZIP software. They can be uncompressed to your harddrive using PKZIP version 2.04g or higher. PKZIP version 2.04g for DOS and PKZIP version 2.5 for Windows (32 bit) are both available on this CD in the \DATA\SOFTWARE\ directory. To install these shareware programs, simply copy them to your hard drive, double –click on the file in Windows Explorer, and follow the directions.

3 CD Information

This CD-ROM conforms to the ISO-9660 system independent standard. An ISO-9660-formatted CD works identically on a PC, Macintosh or Unix workstation. The directory and file structure of the CD can be viewed as if it were a conventional hard disk. Although the file structure is system independent, the user must still deal with differences in the way different operating systems format files, in particular ASCII files. ASCII files are provided in IBM-compatible format. In order to use these files on Unix workstation, they must be converted to Unix ASCII file format using the Unix “dos2unix” command (see your Unix documentation).

Compact disks are a cost effective way of distributing large quantities of data but do have some limitations. Data transfer rates of CD-ROMs are comparable to hard disks but access times are much slower. The slow access time can have negative implications for applications that require concurrent querying of several files. The speed of access to the data can be greatly improved by copying them to the hard disk and reading them from there.

4 Data Formats

4.1 Standard Data Formats

There are sub-directories under the \DATA directory that contain the data in a variety of formats such as Arc/Info coverages, shape files (.shp), MapInfo files (.mif/.mid), ASCII files (.dat/.def), and raster files (.tif, .bil). The \SHP and \MIF sub-directories have been further sub-divided into \POLY, \LINE, \POINT, and \TEXT directories as required for the database structure of these formats (see below).

³ the *Weights of Evidence (WofE)* add-on to Arcview® is available, free-of-charge from the Geological Survey of Canada – down-load from website <http://gis.nrcan.gc.ca/software/Arcview/wofe>

4.1.1 ARC

Stored in the \DATA\ARC sub-directory, Arc/Info format files can be read directly by Arc/Info, ArcExplorer and Arcview on all supported platforms. They include point, vector, and polygon coverages as well as grids. All grids are named with *_g extension.

4.1.2 MIF

Stored in the \DATA\MIF sub-directory, MapInfo files include both .mif and .mid files for geometry and attribution. Note that these files are zipped to reduce file size and that point, vector, and polygon files within this format are stored in separate sub-directories within the zip files.

4.1.3 SHP

Arc/Info shape files are stored under the \DATA\SHp sub-directory and can be opened directly in Arcview or the included viewer. Note that each data set is separated further by data type (i.e., vector, polygon, point, or text).

4.1.4 ASCII

ASCII data files are composed of matching pairs of files with .def and .dat extensions. The .def files provide a listing of the database field definitions (name, length, type, etc.).

The .dat files are comma delimited text files containing complete listings of all the records of all point coverages, including easting and northing information. These files may be imported into spreadsheet or database software packages.

Note that this data can be very useful to CAD users. Since the DXF files (see below) can not contain values for all the attributes of the database records when converting to .dxf format, one of the fields in the database has been provided as a reference, or look-up field. For example, the record number, or an identifier string from the record, is viewable from within AutoCAD. Using this reference, the ASCII .dat file can be used to view the record's remaining attributes.

4.1.5 RASTER

Arcview raster images are provided in .bil (band interleaved by line) and .tif (TIFF) format. BIL and TIF images can be displayed directly in Arcview II or imported to other software packages such as MapInfo. Additional files (.hdr, .stx, .clr for .bil and .tfw for .tif) included on the CD are required for the image to display properly in Arcview. These raster files can also be directly imported into Arc/Info as grids by using the *imagegrid* command with Arc/Info software (not included on this CD).

4.2 Interchange Formats

Several common interchange file formats are provided on the CD-ROM to ensure maximum compatibility of the data with a wide range of GIS and CAD systems. File formats are identified by their subdirectory name (e.g. E00, DXF) and each format is discussed below.

4.2.1 E00

Stored in the \DATA\E00 sub-directory, Arc/Info's ASCII interchange format allows Arc/Info coverages to be read by Arc/Info on all platforms. The format is also supported by many other GIS packages. As with any ASCII files on the CD-ROM, .e00 files must be converted to UNIX ASCII format for use on UNIX workstations.

4.2.2 DXF

Stored in the \DATA\DXF sub-directory, ASCII-format .dxf files are widely used by both CAD and GIS software to interchange line and point data. By definition, .dxf files do not support topology for polygon files. However, polygon attribute information can be associated to .dxf files as attributes tagged to text located inside polygons. Note that some maps have no attributes usable as layer names in .dxf format, and, no map has kept the non-dxf attributes during the conversion. However, the non-dxf attributes from point files can be viewed from the associated ASCII-format .dat/.def files mentioned in section 4.1.4 above. For vector (line) files, the type of line (e.g., fault, contact, etc) is often used as the layer name for use by the CAD program, and they can therefore be sorted by layer name to differentiate line types. The .dxf file set has been zipped to reduce file size. Once unzipped, the .dxf files must be converted to UNIX ASCII format for use on UNIX workstations.

4.3 Support Formats (metadata)

Several files are included on the CD-ROM to support and enhance the digital data information, including marginal notes, data structure and legends. These files are also identified by their extension and are listed below:

4.3.1 APR

In the root directory of the CD-ROM is a file called SWAYZE.APR. This .apr file format is used by Arcview to store a collection of views of the data which are immediately useable in Arcview. See Section 2, Hardware and Software Requirements, for more information.

4.3.2 TXT

All data structure files, marginal notes and metadata are provided in DOS compatible ASCII format in files ending with the .txt extension. As with any ASCII files on the CD-ROM, .txt files must be converted to UNIX ASCII format for use on UNIX workstations.

4.3.3 DOC

Marginal notes and other supporting documentation are provided in Microsoft Word for Windows, version 6, as files ending with .doc.

4.3.4 HTM

This user guide is also provided in HTML and can be opened with any Internet browser or any HTML viewer.

4.3.5 KEY

These files duplicate the full polygon legend presented on the hardcopy map in DOS-compatible format. They can be read for better understanding of the map data but are specifically intended for use by Arc/Info users to plot a simple legend for the map. As with any ASCII files on the CD-ROM, .key files must be converted to UNIX ASCII format for use on UNIX workstations.

4.3.6 AVL

Also included in the directories for the geology polygon files are .avl files. These can be used to colour each map when in Arcview by double clicking on the geology polygon theme and then loading the .avl file. The geology maps have already been coloured using these .avl files in the geology view from the swayze.apr project file.

5 Projection

All data is provided in UTM Zone 15, NAD83 projection. In the case of point data such as till geochemistry where the original coordinates provided were in a different projection, both the original coordinates and the UTM projection coordinates are provided.

6 Directory Structure

Root directory:

The root directory of the CD-ROM contains various federal government regulatory files:

citation.txt	Proper citation for the CD-ROM
license.txt	License agreement information
readme.txt	Brief overview to get you started using the CD-ROM
lisezmoi.txt	Version Francais - commencer a utiliser la disque.

Sub-directories:

- DATA** Contains all the actual digital data divided first by format (ARC, E00, DXF, MIF, SHP, RASTER, ASCII) and then by data set (e.g. DRILCORE, GEOLOGY, GEOPHYS, QUAT, LITHCHEM, MINERAL, NTS, ROADS, TWP) and lastly by source or type or other characteristic (e.g. GEOLOGY\GOO, GEOLOGY\GSC, GEOPHYS\EM, GEOPHYS\GAMMA). For example, the Arc/Info map TRACE83 would be found in \DATA\ARC\LITHCHEM\TRACE\TRACE83, and the e00 version of the Geology of Ontario map would be found in \DATA\E00\GEOLOGY\GOO\GOOGEOLE00. All files needed to use the Arc/Info versions of the digital data (e.g. structure of data information, legend information) are also provided in each directory with the data.
- DOC** Holds the user guide (this document in various formats).
- SOFTWARE** Contains miscellaneous shareware or freeware useful in dealing with these datasets.

7 Data Sets

The following data sets are provided on this CD-ROM. Data format sub-directories can be substituted for "{FORMAT}" in the path (See Section 4.1, Interchange formats, for descriptions of each format).

7.1 National Topographic System boundaries (\DATA\{format}\NTS)

<i>Map</i>	<i>Source</i>	<i>Description</i>
nts250	GSC	Boundaries of 1:250,000 NTS map sheets
nts50	GSC	Boundaries of 1:50,000 NTS map sheets

7.2 Township boundaries (\DATA\{format}\TWP)

<i>Map</i>	<i>Source</i>	<i>Description</i>
swayze	GSC	Boundaries of study area
twp	OGS	Township boundaries

7.3 Roads (\DATA\{format}\ROADS)

<i>Map</i>	<i>Source</i>	<i>Description</i>
kbroads	GSC	Logging roads compiled from airphotos, field work and NTS map sheets
mbroads	OGS	Logging roads compiled from airphotos, field work and NTS map sheets

7.4 Drillcore (\DATA\{format}\DRILCORE)

<i>Map</i>	<i>Source</i>	<i>Description</i>
dcore83	OGS	Location of drillholes and associated attributes

7.5 Lithogeochemical data (\DATA\{format}\LITHCHEM)

<i>Map</i>	<i>Source</i>	<i>Description</i>
<i>path</i> \DATA\{format}\LITHCHEM\MAJORS		
wra83 / wracl83	OGS, GSC, Falconbridg e Ltd.	Lithogeochemical data – raw and cleaned / screened
<i>path</i> \DATA\{format}\LITHCHEM\TRACE		
trace83		Includes all oxides (as in wra83) as well as trace elements

7.6 Mineral data (\DATA\{format}\MINERAL)

<i>Map</i>	<i>Source</i>	<i>Description</i>
min83	OGS	Locations as well as basic attributes of mineral deposits and occurrences

7.7 Quaternary data (\DATA\{format}\QUAT)

<i>Map</i>	<i>Source</i>	<i>Description</i>
<i>(path</i> \DATA\{format}\QUAT\SURFMAPS)		
gooquat	OGS	Surficial polygons (1:1,000,000 scale)
mbqto10	OGS	Surficial polygons for NTS 52o10 (1:50,000)
<i>(path</i> \DATA\{format}\QUAT\AUGRAIN)		
augr83	OGS	Gold grain counts
<i>(path</i> \DATA\{format}\QUAT\BSOIL)		
bhor83	OGS	Geochemical analysis of b-horizon soil profile
<i>(path</i> \DATA\{format}\QUAT\TILL)		
tilicp83 /	OGS	Geochemical analysis of till (C-horizon) ICP and INAA

tilina83 analyses

(path \DATA\{format}\QUAT\STRIAE)

mbstriae OGS Glacial striae measurements

7.8 Geophysics (\DATA\{format}\GEOPHYS)

Map Source Description

(path \DATA\{format}\GEOPHYS\EM)

swdc_g /swdcs_g	OGS	Decay constant (raw values and stretched 8 bit values from 0 to 255)
swde_g /swdes_g	OGS	Decay constant (deherringboned) ⁴
swres_g /swress_g	OGS	Resistivity (raw values and stretched 8 bit values from 0 to 255)
swrdf_g /swrdfs_g	OGS	Resistivity (raw values and stretched 8 bit values from 0 to 255 – deherringboned and filtered))

(path \DATA\{format}\GEOPHYS\GAMMA\LOW)

ura_g83 /urae_g83	GSC	Equivalent uranium (eU) (linear and equalized stretch of raw data – 8 bits from 0 to 255)
thor_g83 /thoe_g83	GSC	Equivalent thorium (eTh)(linear and equalized stretch of raw data – 8 bits from 0 to 255)
pota_g83 /pote_g83	GSC	Percent potassium (%K)(linear and equalized stretch of raw data – 8 bits from 0 – 255)

(path \DATA\{format}\GEOPHYS\GAMMA\MEDIUM)

uraw_g /urawe_g	GSC	Equivalent uranium (eU) (linear and equalized stretch of raw data – 8 bits from 0 – 255)
thraw_g /thrawe_g	GSC	Equivalent thorium (eTh)(linear and equalized stretch of raw data – 8 bits from 0 – 255)
kraw_g /krawe_g	GSC	Percent potassium (%K)(linear and equalized stretch of raw data – 8 bits from 0 – 255)
thrk_g /thrk_g	GSC	Thorium/potassium ratio grid (linear and equalized stretch of raw data – 8 bits from 0 – 255)
urk_g /urke_g	GSC	Uranium/potassium ratio grid (linear and equalized stretch of raw data – 8 bits from 0 – 255)
urth_g /urthe_g	GSC	Uranium/thorium ratio grid (linear and equalized stretch of raw data – 8 bits from 0 – 255)

(path \DATA\{format}\GEOPHYS\GRAVITY)

grv_g83	GSC	Raw data (milligals)
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⁴ Centurion Magnetic and EM Viewing Software – OGS, 1996

grvs_g83	GSC	Raw data stretched to 8 bits from 0 – 255
<i>(path \DATA\{format}\GEOPHYS\MAG\GSC)</i>		
mg_g83 /mgse_g83	GSC	Mag from southern Swayze (raw, and stretched, equalized from 0 to 255)
mg0_g83 / mg45_g83	GSC	Shaded relief mag from southern Swayze (raw, 0 degrees (N) and 45 degrees (NE) using 30 degree elevation)
gsm_g83 /gsms_g83	GSC	Low resolution mag (raw, and stretched to 8 bits from 0 – 255)
gm0_g83/gm45_g83	GSC	Shaded relief low res mag (0 degrees (N), and 45 degrees (NE) using 30 degree elevation)
<i>(path \DATA\{format}\GEOPHYS\MAG\NORANDA)</i>		
swtf_83g /swtfse_g / swtfsl_g	Noranda Inc.	Mag data (raw, and equalized, and linear stretch from 0 to 255)
swvgs_g /swvgse_g	Noranda Inc.	Vertical gradient (linear stretch, and equalized stretch)
swtf0_g /swtf45_g	Noranda Inc.	Shaded relief (0 degrees (N), and 45 degrees (NE) – 30 degree elevation)
<i>(path \DATA\{format}\GEOPHYS\MAG\OGS)</i>		
swmols_g/swmoss_g	OGS	Total field smoothed, and total field smoothed and stretched between 0 and 255)
swvds_g /swvdss_g	OGS	Vertical gradient – smoothed, smoothed and stretched from 0 to 255

7.9 Geology data (\DATA\{format}\GEOLOGY)

Map Source Description

(path \DATA\{format}\GEOLOGY\COMPOSIT)

compgeol	OGS	Geology polygons and arcs (OGS 1:253,000 map series)
compdyke	OGS	Mapped Dykes
compflt	OGS	Mapped faults
compfold	OGS	

(path \DATA\{format}\GEOLOGY\FALCGEOL)

falcgeol	OGS	Compilation of OGS open file maps
falcolay	OGS	Contacts, faults

(path \DATA\{format}\GEOLOGY\GOO)

googeol	OGS	Geology polygons (1:1,000,000 scale)
goodyke	OGS	Dykes
gooflt	OGS	Faults

(path \DATA\{format}\GEOLOGY\NSWAYZE\MAP)

nswaygeo	OGS	Geology polygons (1:50,000 scale)
nswaylay	OGS	Contacts, faults, dykes
nswaypts	OGS	Field measurements
nswaymin	OGS	Mineral occurrences

(path \DATA\{format}\GEOLOGY\NSWAYZE\FIELD)

jastruc	OGS	Field measurements
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(path \DATA\{format}\GEOLOGY\GSC\FIELD)

alter83	GSC	Alteration mapped in the field
fold83	GSC	Fold type mapped in the field
foli83	GSC	Foliation measurements
fract83	GSC	Fracture measurements
geoch83	GSC	Locations and descriptions of geochron samples
outcr83	GSC	Locations and descriptions of outcrops
photo83	GSC	Locations of photos taken in field
sample83	GSC	Locations of rock samples taken in field
shear83	GSC	Locations and descriptions of shear zones mapped in the field
struct83	GSC	Structural measurements

(path \DATA\{format}\GEOLOGY\GSC\MAPS)*

* - this section duplicated for sub-directories \NTS41o8, \NTS41o10, \NTS41o15, \NTS41o16, \NTS41p5, \NTS41p12, \NTS41p13 and \GENERAL

geolpoly	GSC	Lithological polygons
hst83	GSC	High strain zones mapped in the field
geoline	GSC	Faults, fold axes, contacts
geoltext	GSC	Annotations for labelling (text)
geochron	GSC	Geochronology sample locations
outcrops	GSC	Outcrop locations
structur	GSC	Locations of structural measurements (for map display only – see \gsc\field\foli83, shear83, fold83, and fract83 (above) for full data on structural observations)
general	GSC	Generalized geology map of study area

8 Disclaimer and Copyright

Although every attempt has been made to ensure that the contents of this CD-ROM are as accurate as possible, the data on this CD-ROM is provided on an “as-is” basis.

The data on this CD-ROM, including this user's guide, are protected by Crown copyright. The receiving institution, or person, shall not sell, distribute, rent, sub-license or lease the CD-ROM or its contents or any part of the contents.

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- *Geological Survey of Canada* – J. Broome, K. Heather, G. Shore, S. Colvine, J. King, S. Lucas

10 APPENDIX A - Data sources and ordering information

GEOCHEMISTRY

Till / Soil / Humus -

Bernier, M.A. and Kaszyki, C.A., 1995. Till, humus and B-horizon soil geochemical database, Surficial Sediment Sampling Program, Swayze greenstone belt, Northern Ontario, 1992-94; Ontario Geological Survey, miscellaneous Release - Data 15

Gold Grain Counts

Bernier, M.A., 1995. Data to accompany OFR 5898 and Preliminary Maps P. 3264-65, P. 3323-27 Heavy mineral, pariculate gold and Au analysis results, Surficial Sediment Sampling Program, Swayze greenstone belt, Northern Ontario, District of Timmins, 1992-1994. Ontario Geological Survey, Miscellaneous Release – Data 12

Lithogeochemistry

Haus, M. and Pauk, T. 1993. PETROCH lithogeochemical data; Ontario Geological Survey, Open File Report 5855, 18p

Ayer, J. 1997. Precambrian geology of the northern Swayze greenstone belt, OGS Report 297

Heather, K- GSC- (unpublished)

Texas Gulf Survey – supplied by Falconbridge Ltd. (unpublished)

Falconbridge Survey – supplied by Falconbridge Ltd. (unpublished)

Fumerton, S. (OGS) – compilation of assessment files

GEOPHYSICS

Magnetics

GSC – 800 m grid regional data – Geophysical Data Centre (contact : Joan Todd, W. Miles – 615 Booth Street – 613-992-6438)

OGS - high resolution data – ERLIS dataset CD 1015 – Swayze greenstone belt

EM

OGS - high resolution data – ERLIS dataset CD 1015 – Swayze greenstone belt

DRILLHOLE

Ontario GEOServices Centre 1995. The Ontario Drill Hole Database (ODHDB), Ontario Geological Survey, 28 Mbytes – Data Set 13

MINERAL PROSPECTS

Fumerton, S.L., Houle, K.A. and Archibald, G. 1995. Digital data on mineral prospects in the Swayze greenstone belt. Plus a computer application to update and edit data using FoxPro: Ontario Geological Survey, Open File Report 5911, 120p.

GEOLOGY

Northern Swayze

Ayer, J., and G. T. Shore, 1995. Precambrian Geology, Northern Swayze greenstone belt, Ontario Geological Survey, 2000 Map Series, M2549

Southern Swayze

Heather, K.B. 1999: Legend and notes for Open Files 3384b-3384i (NTS 41P/05, 08, 09, 10, 12, 13, 15, 16), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384a.

1999: Geology, Rollo Lake sheet (41P/15), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384b, 1:50 000 scale.

1999: Geology, Rush Lake sheet (41P/16), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384c, 1:50 000 scale.

1999: Geology, Mattagami Lake sheet (41P/13), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384d, 1:50 000 scale

1999: Geology, Sultan sheet (41P/10), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384e, 1:50 000 scale.

1999: Geology, Opeepeesway Lake sheet (41P/09), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384f, 1:50 000 scale.

1999: Geology, Gogama sheet (41P/12), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384g, 1:50 000 scale.

1999: Geology, Biscotasing sheet (41P/08), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384h, 1:50 000 scale.

1999: Geology, Westree sheet (41P/05), Swayze greenstone belt, Ontario, Geological Survey of Canada, Open File 3384i, 1:50,000 scale.

NTS – BASE DATA (drainage, topography)

This data has not been included on this CD due to royalty issues as previously mentioned. However the following 1:50,000 maps sheets cover the study area and are available in digital format: 41O/15, 41O/16, 41P/13, 41O/10, 41O/9, 41P/12, 41O/8, 41P/5. These are available for purchase from:

Geomatics Canada
NTDB Customer Support Group
Centre for Topographic Information
2144 King St. West, suite 010
Sherbrooke, Quebec
J1J 2E8
tel: 1-800-661-2638
fax: 819-564-5698
Internet: <http://www.ccg.mcan.gc.ca>

LAKE SEDIMENT DATA

This data is also not included on the CD but the area is covered by National Geochemical Reconnaissance (NGR) lake sediment surveys available as GSC Open File Reports # 1357 and # 1657. This data can be purchased from the Geological Survey of Canada (P. Friske).

REMOTELY SENSED DATA

Remotely sensed data for the study area can be ordered directly from Radarsat International:

RADARSAT International Headquarters
13800 Commerce Parkway
MacDonald Dettwiler Building
Richmond, British Columbia
V6V 2J3
CANADA
Tel: (604) 231-5000
Fax: (604) 231-4900

11 Appendix B – Reports and papers dealing with compilation and analysis of the data on this CD-ROM

Ayer, J., 1995. Precambrian geology, northern Swayze greenstone belt, District of Sudbury; Report 297, Ontario Geological Survey, 57 pp.

Bernier, M.A., C.A. Kaszycki, I. Wilkinson and J.R. Harris 1995. Proportionally Sized Circle Plot of Particulate Gold Abundance in Surficial Sediments (-10 Mesh Size Fraction), Swayze greenstone belt, Superior Province, Ontario, GSC Openfile Map 3130, OGS Preliminary Map P. 3326.

Bernier, M.A., C.A. Kaszycki, I. Wilkinson and J.R. Harris 1995. Proportionally Sized Circle Plot of Particulate Gold Abundance in Surficial Sediments (-230 Mesh Size Fraction), Swayze greenstone belt, Superior Province, Ontario, GSC Openfile Map 3131, OGS Preliminary Map P. 3327.

Centurion Magnetic and EM Viewing Software – OGS, 1996

Fumerton, S., L. Wilkinson, J.R. Harris. 1995. Mineral Occurrences in the Swayze greenstone belt, Superior Province Ontario. GSC Openfile Map 3134, OGS Preliminary Map P. 3330.

Fumerton, S. and Houle, K., 1993. Mineral showings, occurrences, deposits and mines of the Swayze greenstone belt, interim report. Volumes 1 and 2; Ontario Geological Survey, Open File Report 5871, 763 pp.

Fumerton, S., Houle, K. and Archibald, G., 1993. Digital data on the mineral showings, occurrences, deposits and mines of the Swayze greenstone belt, plus a computer application to update and edit the data using Foxpro_, interim report; Ontario Geological Survey, Open File Report 5872, 112 pp.

Harris J.R., L. Wilkinson, E. Grunsky, K. Heather, and J. Ayer 1999. Techniques for Analysis and Visualization of Lithogeochemical Data with Applications to the Swayze greenstone belt, Ontario, (submitted to Journal of Geochemical Exploration – in press).

Harris J.R., Wilkinson L. and J. Broome 1995. Mineral Exploration Using GIS-Based Favourability Analysis, Swayze greenstone belt, Northern Ontario, in Proceedings of the Canadian Geomatics Conference (CD-ROM), National Defense.

Harris J.R., Wilkinson L. and J. Broome 1995. The GIS/Database project: Progress in the Swayze greenstone belt, NODA Summary Report, edited by L. Owsiacki, M. Walters, H. Brown , R. Shannon, pp. 110-116.

Harris, J. and Wilkinson, L. 1999. Swayze Greenstone Geoscience Dataset : Results form data analysis using GIS technology, GSC Open File CD – D3731.

Harris, J. R., Broome, J. and Heather, K.B. 1993. Swayze greenstone belt GIS Project. NODA Summary Report 1993-1994 pp. 115-121.

Harris, J.R. and L. Wilkinson . 1995. IHS Transformed Total Field Magnetism/Gravity and EM Conductors, Swayze greenstone belt, Superior Province, Ontario, GSC Openfile Map 31302 OGS Preliminary Map P. 3328.

Harris, J.R. and Wilkinson L. 1999. Drift Exploration in Glaciated Terrain, Short Course Notes presented during the 19th International geochemical Exploration Symposium, Vancouver, British Columbia, sponsored by the Association of Exploration Geochemists, Chapter 6, pp. 182-210.

Harris, J.R., Grunsky, E.C. and Wilkinson, L. 1997. Developments in the effective use and interpretation of lithogeochemistry in regional exploration programs: application of GIS technology. Proceedings of Exploration 97: Fourth Decennial International Conference on Mineral Exploration, edited by A.G. Gubins, pp. 285 – 292.

Harris, J.R., Grunsky, E.C. and Wilkinson, L. 1999. Effective use and interpretation of lithogeochemical data in regional exploration programs, (submitted to *Ore Geology Reviews* – in press).

Harris, J.R., Wilkinson, L., Heather, K.B., Fumerton, S., Bernier, M., Ayer, J., and Dahn, R. 1999. Mesothermal gold potential of the Swayze greenstone belt, Ontario: Application of GIS technology (in press).

Harris, J.R., Wilkinson, L. and Broome, J. 1994. The GIS/Database Project: Progress in the Swayze greenstone belt. NODA Summary Report 1994-1995. pp. 110 – 116.

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Heather, K.B., 1993. Regional geology, structure, and mineral deposits of the Archean Swayze greenstone belt, southern Superior Province, Ontario; *in* Current Research, Part C; Geological Survey of Canada, Paper 93-1C, pp. 295-305.

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Heather, K.B., Shore, G.T. and van Breemen, O., 1996. Geological investigations in the Swayze greenstone belt, southern Superior Province, Ontario; *in* Current Research 1996-C, Geological Survey of Canada, p. 125-136.

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Wilkinson, L., Harris, J.R., and Grunsky, E.C., 1997 :Building a lithogeochemical database for GIS analysis of the Swayze greenstone belt; Methodology, Problems and Solutions, (submitted to the Journal of Geochemical Exploration – in press).